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There are approximately 350,000 full-time college and university professors of varied educational backgrounds distributed among 2,000 institutions differing in size, purpose and level. A college professor spends an average of 12 to 15 hours a week teaching and the remainder of his time preparing lectures, grading papers, keeping records, attending meetings and seeing students. The teaching time of the graduate faculty member is almost half that of the college professor, allowing him time to conduct other scholarly activities, mainly research. Many observers feel that if teaching and research were rewarded proportionately, the "publish or perish" requirement for non-tenured faculty would be eliminated and more committed individuals would be attracted to faculty positions. A recent study of faculty members of 10 ranking US graduate institutions reveals that over 50% believe that interdisciplinary organization would result in greater faculty utilization and student development, yet 80% reported that their disciplines were organized along departmental lines. On the basis of commitment and interest in pure versus applied studies, 4 types of faculty were identified: teacher, scholar-researcher, demonstrator, and consultant; how they are utilized varies with individual institutional needs. Inadequate grading and credit systems, outdated lecture methods and class schedules hinder faculty self-renewal and growth. Innovative educational approaches are suggested for more effective utilization of faculty talents and intellectual stimulation of students. (WM)

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THE UTILIZATION OF THE COLLEGE AND UNIVERSITY TEACHER

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THE UTILIZATION OF THE COLLEGE AND UNIVERSITY TEACHER*

Traditionally the detached stance of the American college or university professor has kept him out of the mainstream of society; hence, although the results of his work may be widely known and evaluated, little is systematically known about his culture, characteristic or life style per se. Histories of higher education (and mythologies about the American professor) generally describe him summarily as a detached individual who is more or less out of touch with the realities of the life that ebbs and flows around him. If there is or ever was any accuracy in this description, it was the Federal government that to a very significant extent initiated the action that set the stage for revolutionary changes in the roles, and subsequentially the status and culture, of college and university teachers in this country. Although the precedent was set as far back as 1862 when the Morrill Act established the land grant colleges and enlisted the services of the agricultural staffs, it was not until the 1940's that the Federal government began to engage the competencies of the faculty on a campus-wide scale. At the same time outside agencies, many of whom held government contracts, entered into competition for their talents and services. The utilization of the professor by off-campus agencies not only changed his character and utility, but often moved the locus of his efforts from the classroom to some external prupose or from his students' interests to the interests of his professional field.

The impact of this involvement with external agencies dramatically changed internal roles and upset the order of the dominant groups on campus. Research began to overshadow teaching and, whereas prior to 1940 the humanities had the major voice on the faculties, after that period the sciences became ascendant and gained the dominant role. The results of this change in emphasis

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* Prepared as a chapter in Commissioner Howe's Assessment Report on the State of the Education Profession. August, 1963.

are visible in the buildings, facilities and financial support each enjoys, but the subtle and more significant differences are discernible in the different life styles and different ways in which scholars use their time and universities utilize their expertise. Any assessment of the utilization of college and university professors that ignores this fact would deal in half-truths and do a disservice to the academic profession as a whole.

Faculty Culture as Determinant of Faculty Roles

The nature of the institution's commitment and the objective interests of its faculty are the major determinants of how faculty subcultures are structurally induced on any given college campus. These are also the determinants of how and where the faculty member perceives his role and utilizes his time and talents.

The fact that approximately 350,000 full-time equivalent college and university teachers of differing educational backgrounds are presently distributed among more than 2,000 institutions varying (1) in size, from 300 to 50,000 students, (2) in purpose, from liberal arts colleges to multiversities, and (3) in level, from two-year colleges to institutes of advanced study which offer eight or more years of work, makes it difficult, if not unwise, to attempt to describe the culture and commitment of the American faculty as a whole. For example, faculties in small elite colleges and those in great research institutions hold quite different interests, attitudes and values and spend their time quite differently from those in less prestigious or non-research institutions. Examples of this type can be replicated almost indefinitely.

Recent research on the interests and characteristics of college and university teachers indicates that while certain personality types tend to gravitate toward certain disciplines, differences in types can be found within

the same unit--especially among the various age levels and among those interested in fundamental versus applied studies. Although differences between the Old Guard and the Young Turks on college faculties are often ascribed to the generation gap, some observers believe that the basic separation today is between those who have a sense of urgency about the university's role in the resolution of the problems of society and those who, believing with Emerson that "The years teach much which the day never knew," are inclined to espouse a more deliberate, evolutionary or indirect approach to problem-solving.

In a study of graduate faculty members in ten of the top-ranked graduate institutions in the U.S., /1/ the Center for Research and Development in Higher Education at the University of California, Berkeley, found that 14 per cent of the 1600 respondents believed that the scholar should remain detached from social problems, 81 per cent believed that the scholar's role is to seek knowledge basic to the needs of mankind and provide education in intellectual analysis for those who will bring about social improvement, but only 6 per cent believed that the scholars ought to be directly involved in defining and serving social needs. In this same study, 19 per cent of the respondents thought that the university should give priority to "mission-oriented" research. The remainder believed that research should be oriented fundamentally around the particular discipline. These differences in role perception definitely influence the manner in which faculty members perceive their utility to the institution and have a direct bearing on their identification with the various campus subcultures.

Two other determinants of faculty culture and utilization are the size and complexity of the institution and the extent of its integration as a total environment. In large-scale institutions faculty subcultures generally form along similar or closely related disciplines. Although some faculty members

move in and out of several groups with ease, most tend to be at home or to limit their work to a single department. The restricting effects of departmentalization on scholarship has often been debated but has resulted in little positive action. The Berkeley Center's study indicates that more than half of the graduate faculty believe that an interdisciplinary or interdepartmental form of organization would be more conducive to faculty utilization and student development, yet over 80 per cent reported that their disciplines are currently organized on departmental lines. Some see the department as primarily a budgetary device, hence for all other purposes they cross departmental lines with ease. Others observe that the budget is the major restraint on interdisciplinary appointments, hence it is a prime inhibitor of maximum faculty utilization.

Faculty cultures are rarely found in pure form on most campuses, but highly autonomous institutions tend to have distinctive cultures of their own. The latter may be partly due to the fact that in the best institutions departmental walls are low or semipermeable. It may also indicate that their scholars feel little compunction about breaking through "administrative conveniences" if the demands of scholarly interaction or progress indicate the need.

Institutional Loyalty and Faculty Types

When faculties are considered on the basis of the perspectives, attitudes and values they hold in common, several subgroups or faculty subcultures can be distinguished. The subcultures generally reflect the individual's orientation to the academic life and the way he utilizes his efforts in it. They tend to evolve around three sets of values: the individual's (1) loyalty to his institution versus his loyalty to his professional discipline, (2) his interest in pure versus applied study, and (3) his interest in humanistic versus scientific modes of thought.

Researchers who have studied the activities of college and university faculties have conceptualized as "Locals" those who exhibit strong loyalty to their institution and tend to devote their primary labors to it. On the other hand, those who show greater loyalty to their profession, or those who are devoted to outside reference groups, are classified as "Cosmopolitans."/2/

When faculty members were studied /3/ on the basis of their commitment as locals or cosmopolitans, and on the basis of their interest in pure versus applied studies, four types of faculty orientation could be identified: (1) The Teacher, who is a local committed to disinterested or pure studies and to the college and its students; (2) The Scholar-Researcher, a cosmopolitan interested in the production of general ideas but little concerned with their application and practice; (3) The Demonstrator, generally a local professional who, on a part-time basis, serves the college in a clinical, supervisory or technical capacity (example, the doctor, teaching supervisor or industrial technician); and (4) The Consultant, who has a national reputation as a professional man, is very mobile and primarily interested in the application of knowledge.

Institutions vary in their needs for these four types. In general junior colleges utilize the teacher and the demonstrator for their major work and have relatively little or no utility for the research-scholar or the consultant as a permanent staff member. Four-year colleges of high academic standing and a strong liberal arts emphasis have a primary need for the teacher but they want him also to have some orientation to scholarship. A few of the very top-ranked liberal arts colleges find it necessary to seek and to reward the cosmopolitan because they feel that they must stay competitive with the university in the recruitment of students, staff and resources.

Four-year colleges in the middle or low range of quality have little

attraction for the scholar-researcher. Here the technical-supervisory demonstrator is in high demand as is also the teacher. The latter usually have higher teaching loads than those in top institutions and they are often assigned to teach a large number of students of lower average intelligence who study in predominantly applied curricula.

Denominational four-year colleges primarily have need of those oriented to teaching. Often they prefer those who hold a particular persuasion and a local commitment.

Universities utilize all four types of faculty orientations in their operation. Because they have a heavy commitment to undergraduate studies, these institutions seek faculty with a teaching orientation even though they rarely give rewards for it. The university's dominant need, however, is for the cosmopolitan scholar whose research produces new knowledge on which innovations can be predicated, and whose standing in the academic community reflects glory on the institution. Universities also use large numbers of demonstrators and consultants, especially in their various professional schools. In these cases, the consultants often serve as bonds and/or intermediaries between the educational institution and the professional associations. Frequently their expertise is utilized in questions of influence, jurisdictional control over professional practice or control over university affairs. Consultants are currently in increasing demand by governmental and civil agencies which are attempting to redress imbalances in society. They probably will play a crucial role in the future development of those urban universities which plan to put increased emphasis on their service function.

The Utilization of the Faculty in Academic Self-Regulation

The dictionary defines a collegium as "an organized society of persons who perform certain functions and possess special rights and priveleges...

/who/ stand in no other relation to the civil magistrates than any other voluntary organization...."

Traditionally, a collegium acts as an informal whole with little or no hierarchy. Although some small colleges still remain under a system of self-rule to operate as collegiums, modern faculty interaction is more commonly based on formal channels of communication, a hierarchy of responsibility and a body of written rules. If collegiality exists on the campus, research on academic organization shows that it is more likely to be found in departments or in research centers, but, viewed as a whole, the contemporary academic institution is more typically a federation of disciplines with bureaucratic tendencies. /4/

Among the rights and privileges of college and university faculties, academic freedom and faculty authority are usually regarded as the most salient. The former allows the scholar to work unfettered in the pursuit, analysis and interpretation of knowledge in his field and assures him protection if he steps apart from or questions the validity of the prevailing culture or tradition. The latter gives him a voice in certain academic aspects of the institution. Usually the typical college professor exercises this option only on major decisions or in crisis situations. He has been content to have day-to-day decisions made by a formally designated representative or professional authority figure. Straws in the current winds portend the possibility of changes in this design within the next few years.

In spite of the fact that much of their former work is now delegated to registrars, counselors, deans of students and other administrative personnel, faculty members themselves engage in a wide variety of committee work in which academic decisions are made. They also serve as advisors on innumerable ad hoc matters. The committee structure on most college csmpuses is complex, diverse and wide ranging. It can consume a staggering portion of the faculty

members time and energies.

It has been observed that as faculty authority shifts from protecting the rights of the whole to protecting the rights of particular divisions or individuals, the latter take on the characteristics of professional entrepreneurs. /5/ In this role some units or individual professors may devote a large share of their time gathering funds, buildings, or other resources, sometimes on the strength of their own reputation and independently of the university's.

Weakening in the collective power of the faculty strains internal relations and makes campus-wide decisions difficult to achieve. At the department level it leads to tentative or pragmatic rather than to firm academic planning, encourages political gerrymandering among special interest groups, and leaves the graduate student insecure and plagued with uncertainty.

The academic entrepreneur is not an unmixed blessing on a campus. If the department is heavily supplied with them, the chairman may be hard pressed to staff its teaching operating. Often he must resolve his dilemma by dropping sections, increasing class size or appointing two inexperienced instructors for the price of the entrepreneur who is off winning funds and influencing agency people. Some observers see the rise of the entrepreneur as a causative factor in the growing impersonality on the large campuses.

Student Activism and Faculty Utilization

A New York Times writer has observed that crises on campuses have made student-watching a national pastime. Although they would hardly describe it as a pastime, college and university administrators in particular and professors in general spend an increasingly disproportionate amount of their time in student-watching--often under duress. This is particularly the case in those institutions that have been the locus of student protest. Faculty in these schools often invest considerably more time as members of committees, boards,

commissions and negotiating teams in their attempts to respond to student protest than they spend in instructional duties. Some are learning for the first time of the great complexity involved in organizing and administering a college or university in an era of rapid social and technological change. Sociologists, for example, who for years rejected Dewey's suggestion that the school system offers a ready-made institution for studying social change, are now examining it from top to bottom, inside and out. Judging by the number of papers they write about higher education, many professors in varied other fields have been jolted out of their preoccupation with their own discipline and have turned their attention to concerns involving student discipline and freedom. This often brings them full circle back to a reconsideration of how they utilize their teaching time.

As a result of their united effort to seek solutions to the global problems raised by the students, many college and university professors have begun to reexamine the relevance of their disciplines to today's problems and to reorganize their approach accordingly. The utilization of the faculties' time in these tasks has the potential of bringing returns that can have more important effects over a greater period, and for a greater number, than might that same time spent by the professors in "covering" their courses. Although working with intransigent or recalcitrant students often leads to frustration, diminishing returns or to a dead end, many professors find that this use of time gives them a better understanding of where the educational system needs revision or strengthening or where teachers themselves have failed to meet the students' aspirations about the college experience. It would be a serious mistake to underrate the importance of devoting time to this activity.

By now, most college personnel are sensitive to this fact. Although many are still unprepared to meet the prospect with élan, the probability is that faculties will spend an increasingly larger amount of time in out-of-class

informal contacts with students or student groups. In some respects this will lead to more not less teaching and learning.

University Organization and Faculty Utilization

An analysis of the nature of the students' complaints about their educational experiences draws attention to the fact that colleges and universities are, by and large, organized to place teaching--rather than learning--in the forefront of their activities. This leads college teachers to spend their time developing course bibliographies, selecting appropriate topics, arranging course materials and gathering pertinent information for their class presentations while their students become passive participants in a one-sided intellectual exercise. Because they have little part in planning the means through which they might explore the knowledge intrinsic to their courses, students rarely have an opportunity to intellectualize on the ends or consequences of that knowledge.

The Chairman of the American Council on Education suggests that if learning became the emphasis, the student would be the center of the campus world and the teacher just one of the components of the learning environment. In this arrangement, a partial role reversal would occur. Teachers would become the expediters and resource persons. Students would search independently for the knowledge they need to know and would then be expected to demonstrate their ability to organize, synthesize, integrate or relate it in some relevant or meaningful way. At this state the instructor and the student together become the evaluators.

Organizationally and administratively, in purpose and in form, whether planned or unplanned, modern institutions face radical change. Those that have been designed for continual review and renewal are in a favorable condition to face change without causing undue stress to their foundations. Institutions

which lack this protective mechanism may find themselves so fragile as to lack resistance, or so rigid as to lack resiliency against the storms that tear at their structure. Of all our institutions, those devoted to education must be systematically weathered. If they are designed to operate in a dynamic state, or to maintain themselves in what the engineers refer to as "dither," they may avoid the deterioration caused by inertia and the undue stress required for tooling up to new functions or to crisis situations.

It is probably accurate to state that education has been a major causative factor in the current upheavals in our society. Because of their implicity our educational systems are caught in the crossfire between those who want to tear down existing institutions and those who want to preserve the status quo. In John Gardner's words, our institutions are beset by "too many unloving critics and too many uncritical lovers." Well-designed educational institutions should be able to survive both varieties and serve as models of self-renewing institutions. As such, they would emerge from each renewal--neither intact nor drastically transformed but with goals relevant to the needs of the age. Operating as planning rather than planned institutions colleges and universities make heavy demands on the faculties' time for this purpose. Because the time, energy and money that is spent on education is time, energy and money invested (rather than consumed), they must constantly evaluate whether the renewal of goals or the introduction of innovative programs, justify this expenditure. The faculty enjoys its major power and responsibility in its role as decision-makers on academic programming.

The Structure of the Academic Program and Faculty Utilization

The practice of subdividing the content of a discipline into discrete segments called courses and then subdividing the content of courses into thirty or forty class presentations over a period of fifteen weeks appears to have

lost its utility for graduate education if not for all higher education. Although this standard practice may have been valid fifty years ago when knowledge grew at a slow pace, the knowledge explosion has made the course approach to teaching untenable. Likewise the semester or quarter approach to teaching at this level has become increasingly difficult to defend Year-long seminars which focus around a topic seem more useful and amenable to the kind of learning situation required for broad exploration, depth analysis or comprehensive integration and synthesis. A few institutions have experimented with calendar changes in the interest of making better use of their faculties and resources, but this is a risk difficult to calculate in the face of current teacher shortages. Few institutions can afford to take that risk. They seek reform in other directions. Many believe that the course structure is the place to start. Given the specificity and breadth of knowledge available today, almost any course that relies on a single professor's ideas is bound to be abortive. For this reason more and more colleges use the team teaching approach which was first utilized by professional schools. They also make increasingly heavy use of outside persons who are knowledgeable about the topics under discussion. These persons complement or supplement the professor's expertise and give the student an opportunity to assess their different perspectives. In many cases the use of practitioners is a response to the student's plea for relevance in his program.

The College Teacher's Activities

Broadly stated, the college teacher is expected to utilize his competencies in instruction and service to his college. Although his assignment does not explicitly preclude the production of research or scholarly writings, the demands of his teaching schedule and other academic responsibilities generally rule out any interest he may have in so doing. On the average, the undergraduate teacher

spends between 12 and 15 hours a week in the classroom. According to descriptive data collected by researchers at the Center for Research and Development at Berkeley, /6/ the remainder of the faculty member's time is spent on approximately seventy different activities related to his academic role. These include the preparation (or revision) of lectures, reading lists or teaching materials, developing examinations, reading and grading student papers, conferring with students about both academic and nonacademic problems, preparing and recording student records, holding office hours, answering correspondence, supervising students engaged in independent study, participating on faculty or student-faculty committees, attending department or general campus meetings, acting as an advisor to a student organization and reading the journals in his specialty.

The Graduate Faculty Member and His Activities

In addition to the duties described for undergraduate teachers, members of the graduate faculty prepare and evaluate the comprehensive or qualifying examinations of Master's or Doctoral applicants, serve on oral examination committees or thesis committees for their own degree students and for the students of related fields, advise doctoral candidates on their programs and sponsor their dissertation research, conduct their own research and write about it or report it for their discipline, participate in their own seminars and serve as visiting speakers for their colleagues' seminars, attend and occasionally present a paper to a colloquy or symposium on an academic or campus-wide issue, and assist one or more postdoctoral fellows.

In addition, graduate faculty members may serve as members of advisory committees of the graduate division, the research council, the chancellor's or president's office or participate as a consultant on an ad hoc basis on a matter before the board of trustess. They also serve on personnel committees in which

appointments and promotions of colleagues are weighed and decided and they frequently supervise one or more junior staff members or teaching assistants who ask for help in finding placement.

The assigned classroom teaching load of the graduate faculty is approximately half that of the undergraduate staff member. This reduced load presumably is to allow him time to pursue research and other scholarly activities. Much of it must be devoted to coordinating the various activities or persons associated with his projects, reading research related to his interests and communicating with scholars who are conducting similar or related studies.

Faculty Rewards and Their Effect on Utilization

Explicitly and implicitly major universities make it clear to their non-tenured faculty that unless they publish within a specified period of their appointment, their chances of retention are extremely remote. Tenured members face this same denouement with respect to the criteria for their advancement. Thus, with respect to the university, only the productive scholar need apply. This policy has given credence to the statement that unless a university faculty member publishes, his life as a member of the faculty will be short or shortened

For many popular critics of higher education, the catch word "publish or perish" serves as a ready whipping post on which to hang the problems of college and university instruction. Some suggest that the curtailment of research would serve as a quick solution to what is wrong with teaching. In so doing they overlook the fact that 85 to 90 percent of all college teaching is done by those who do not do research or by those who do not publish.

These critics exhibit a far more serious error in their failure to understand that research is the heartthrob of the university and of the nation. or to realize that it is by the publication of research that new knowledge is pumped into the bloodstream of man's intellectual life. Generally, men and

nations use the new knowledge to improve the human condition. Those who support the research function of the university do so on the assumption that research informs man's behavior and frees him from the forms of irrationality which struggle to bind him. To suggest that this function of the university be deemphasized is tantamount to saying, "Stop searching. Man has acquired enough knowledge."

To put boundaries around the research function of the university would be to destroy its purpose and pronounce its requiem as an institution devoted to truth. Historically, institutions and nations which do not invest in their future by supporting research and scholarship have little role in shaping that future. As a leech or a parasite on others, they become morally weakened and soon find themselves cut off at the growing edges. Research is the prime source of national growth and the prime function of the university. Hence the university and the Federal government are interested in this vital function.

No knowledgeable person would deny the change that abuses do occur as a result of the emphasis on publication as a criterion for faculty promotions. However, the problems of the university as a university would be compounded if scholars were not rewarded for their contributions. If, as has been suggested, research were done by independent institutes instead of by universities, graduate students would undoubtedly be worse off because professors would prefer to be at the institute exploring the unknown than at the educational institution merely transmitting the known.

The anti-research argument is specious when it is used as an easy explanation for poor teaching. In the few attempts that have been made to measure and compare the teaching effectiveness of those who publish with those who do not, student ratings tended to favor the former. /7/

While some universities may have succumbed to pressures which have eroded the teaching status, or caused teaching time to be crowded out by research, the

plague seems to infect both houses of higher education because the converse is true in smaller institutions: research and scholarly work are crowded out by heaving teaching responsibilities.

If there is criticism to be leveled, it probably should be laid at a number of doors. In addition to the need for better balance in the preparation of college teachers and in the awards given for research versus those given for teaching, a more equitable distribution of their respective resources should be considered. Research has received a generous share of the nation's wealth. Teaching deserves proportionately as much.

One researcher finds an analogy between the awards and status given to men in science and what he describes as the Matthew effect.* /8/ In this context, men of considerable repute receive greater increments of recognition for each particular contribution, whereas such recognition is withheld from scientists who may have contributed as much or more to science than those recongized but who have not yet made their mark.

The misallocation of recognition is common in cases of collaboration on research or the coauthoring of papers, and in cases of independent multiple discoveries that are made by men of unequal distinction.

This same principle applies to institutions. Centers of great repute are allocated larger resources, attract great scholars and recruit the best graduate students. Less prestigious institutions which may have the same potential for excellence often find themselves losing that which they have as they watch their best faculty members and students enticed away into ostensibly more verdant territory.

This is another aspect of the academic marketplace which tends to make the young professor tune out the opportunities offered to him to teach in small

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*From the Gospel according to St. Matthew:
"For unto everyone that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath."

liberal arts college, and to tune into the blandishment of the research institution. Some decide that they would prefer to work in the shadow of the "great man," even though this means that they themselves may never emerge into the spotlight, rather than to work in an obscure college with less well-known scholars.

While it is true that the forces in the university are arrayed for research, this does not necessarily imply that they are deliberately arrayed against teaching. What it probably does mean is that the forces for scholarly conformity are compelling because the rewards of that conformity are high. Many authorities believe that if teaching offered commensurate rewards the publish or perish alternative would soon lose its challenge, teaching would ascend as a career, and both teaching and research would attract more creative and committed individuals. It may be the student activists who will convince the powers-that-be that this is an hypothesis worth testing.

The Changing Life Style of the College Teacher and Its Effect on His Utilization

The career patterns and life styles of most college faculties have undergone appreciable change over the past two or three decades. Although the rate of change has been uneven among the various disciplines, the movement has been accelerated in almost all disciplines. Some types of careers have been eliminated altogether and others have dissolved and recombined with related units to form new patterns. Some have merely changed their labels.

The biographies of many senior members on today's faculties trace a transition in their life style from that of the semimonastic scholar contemplating the life of the early Greeks to that of the scholar in the urban grant multiversity who spends his time studying the inhabitants of Carnaby Street or the Haight-Ashbury. Viewed from any dimension this represents a change that has been basically additive. For example, during the lifetime of the senior

faculty member, the knowledge in his field has probably tripled or grown four-fold. This has resulted in more instrumentation, more facilities, more contact with scholars off campus or abroad, more time away from the institution, and more researchable problems. Over that same interval he has seen college enrollments grow from approximately one million in the 1930's (a figure it took nearly 300 years to reach) to nearly six million in the current year. He has seen the characteristics of the college-going population change from that of the upper, and upper-middle socioeconomic class, to become broadly representative of all classes. All of these changes have modified or changed his utilization in some basic manner.

With the great influx of students his own role has been greatly altered. Most noticeably he finds that the distance between himself and his students has widened to attenuate their relationships and to limit his influence with them. He posts office hours--which he must often cancel. He notes this same phenomenon in respect to his colleagues in other departments. Increased numbers have decreased his opportunities for collegiality. More and more he finds that his circle of colleagues now mainly includes those in his own special field. He has moved from a period in which the role of the scholar was to synthesize and contemplate a body of knowledge already possessed, to a period in which the scholar is expected to advance the knowledge of what is unknown and to apply his findings to the improvement of technology and human living. He has seen universities becmme great by bringing together brilliant professors and allowing them to gather a group of colleagues and students who will pursue their own lines of research, but he notes that this has introduced some divisive elements and created powerful interests. He has experienced a phenomenal increase in available research funds, travel grants and stipends for his students. Joyfully he has found that in a thirty-year period his salary has quadrupled,

but he finds that it is still not in line with what many of his fresh Ph.D. students are able to draw.

While he still finds some colleagues who are reluctant to adopt new roles he notes that these are gradually being replaced by men who believe that initiative and the competitive spirit in the intellectual sphere is just as valid as these same qualities in the economic sphere. Those who hold this latter view sometimes startle him by their opportunism and lack of institutional loyalty, but he has come to realize that grantsmanship is an acceptable way of life for the scholar in the multiversity.

The use of the college professor as an expert has become commonplace. It has drawn thousands of them out of the university environment and into the local and national arena. College and university professors now serve on councils, committees, and commissions and participate actively on programs, panels, seminars and symposiums which examine problems ranging from aerospace to zymurgy (wine chemistry). They also serve as policy makers on numerous boards and as heads of administrative units. A few have their own laboratories, others direct research centers or institutes. Still others have part-time responsibilities in affiliated institutions. At any given point in time approximately 15 per cent are on academic leave.

As knowledgeable persons in their fields, college faculty members are called upon to testify before legislative or other committees, to conciliate conflicts and to adjudicate disputes on and off campus. They serve as advisors to presidents, governors, foundations, and to foreign as well as domestic institutions. As consultants and counselors in an almost infinite variety of situations they leave their impact on the community. Increasingly they are becoming involved in the political world.

Walter Lippmann recently voiced the high respect in which the scholar is held: "The hierarchy of priests, the dynasties of rulers, the countries, the

civil servants and the commisars have to give way...and there is left as the court of last resort when the truth is at issue, 'the ancient and universal company of scholars'."

If there is a "Mr. Chips" teaching in any college today, no one appears to be writing novels or biographies about him. The probability is that Mr. Chips is so busy writing his own novel, or some other scholarly work, that he isn't available for an interview. Or so the conventional wisdom and the press would have one believe.

The popular figure of the gentle scholar who is deeply concerned about each one of his students has been replaced in the image-making media by the professor as an anti-hero: a man so busy publishing that he is unaware that the world around him is perishing. Or worse still, as the man who created forces that now threaten to destroy mankind. To some, the works of the academic man are suspect because as he discovers and organizes new intelligence he demonstrates again and again that the university is a force for "skepticism, emancipation and pluralism." Some who knew it as a place for reinforcing old beliefs and values are threatened by this openness to change.

If there is one compelling lesson that emerges from the current state of confusion in higher education, it is the fact that the role of the college and university professor is grossly misunderstood by a large segment of the American public. Some see him in loco parentis and as such expect him to protect and transmit their values; others see him in loco padre and so want him to give counsel and support to their beliefs; still others see him in loco politico and these pressure him to adapt his teaching to their platform or to remain neutrally silent. The professor himself may see his role as that of a co-partner with his students in their common search for the truth in these various values, beliefs, or platforms. He often finds himself under attack by those who expect the college or university professor "to know it all," but

not to teach it "like it is" if, in so doing, he conflicts with their particular bias or belief system.

Attempts to define or to delineate the role of the professor usually result in dreary platitudes or glittering generalities. The guidelines posited for his various roles are either so circumscribed or so fluid as to make them useless. Books on the role of the college teacher offer little more than exhortative advice or injunctions for "the effective teacher". While their authors give minute details making for "tidiness" in teaching, they fail to come to grips with the nature of teaching itself. In short, they fail to consider what teaching is. Still less do they examine the existentialist concept of the becoming teacher. This is an area where research is sorely needed.

The early years of a college teacher's career are often his most difficult. During this period in a large institution he may be "on" the faculty but he is not "of" if. Full acceptance is contingent upon his productivity. This is usually spelled r-e-s-e-a-r-c-h. Until he has published, his status as a member of the scholarly community is on trial. His security as a member of the faculty is tentative.

In a small institution the beginning years of a college teacher may be difficult because he often is given a heavier teaching load than the senior members of the staff. Because his doctoral program failed to teach him how to organize his materials for teaching and gave him no background in the psychology of teaching and learning, he finds it difficult to adjust to the demands that teaching imposes on him or he imposes on himself. He has--besides lecture to prepare, papers to grade, records to keep, students to see and meetings to attend--a life of his own to live. If he wants to spend that life in the groves of academe, he must keep his mind on his production. As he gains experience in the academic life he is given more and more administrative or non-teaching responsibilities which enlarge his view of the academic world but

often further drain his energies from his instructional responsibilities.

The New Breed of College and University Teachers

If one looks to the educational horizon, he can observe a new breed of college and university professors emerging. As yet their numbers are far from legion, but the signs all portend that their tribe will increase.

Disavowing the "institutionalized timidity" with which the academic community traditionally infused its members with respect to the scholar's role in social and political matters, this new breed of professors have reversed the non-involvement posture of their older colleagues. Whereas many of the latter are conditioned--and content--to assume the role of the social critic passively, the members of this new cohort are inclined to take an active role in designing and reformulating plans for the improvement of the human condition. Rejecting the old sanctions of the academic culture, which imposed a semimonasti life style on the scholar and rendered him ineffective on the action front, the new breed of college professors view the university as an institution without walls. More and more they eschew the library as the prime source of information for learning in favor of the "total environment".

Many, although not all, of this new group have their academic backgrounds in the liberal arts rather than in a professional field. A few are from the sciences. Using the methodology of the liberal arts, they tend to use what has been described as the "interconnectiveness of knowledge" in their approach to the discovery of self, of man and of society. They are, essentially, "interdisciplinary persons". While they accept and are quite capable of utilizing the new technologies, they sometimes raise questions about the ethical and social consequences of such inventions as they affect the lives of men and women. Though fundamentally humanists and optimists, they often wear the faces of discontent when they observe or comment on existing conditions in society.

Some of the new breed are newcomers to teaching. The bulk of the others are junior members of faculties with three or four years of experience. A few have taught longer. Some of the newcomers are veterans of the dissent and protest student movements that have swept college campuses the world over. Others were drawn into college teaching on the belief that education is the key to many, if not most, of the problems which beset man's relationships with himself and with other men. Almost all are committed to the ideal that the unexamined life is not worth living, thus they continually question the relevancy of old knowledge and old values to new situations and new systems.

Some joined the new breed because the nature of their graduate programs prepared them to become action oriented. Others who had been prepared in the traditional approach to knowledge say that they rejected its methods on the grounds that the university and its scholars are instruments for social change and, as such, neither can afford to fiddle over esoteric matters while Newark, Detroit, Watts, and Washington burn. Some are convinced that the needs of the present generation require a revolution in teaching methods. Others press for a total reorganization of the existing structure. Many of the latter are found on the faculties of the new innovative institutions. According to some reports they do not remain long in any one place. This may be related to their mission orientation. The impact of the new breed will become more apparent in the next few years.

Urban Needs and Faculty Utilization

Most scholars agree that the role of the university is not limited to the local community but is to serve the larger community of which it is a part. /9/ Although tensions often occur, a symbiotic relationship generally exists between town and gown and between scholars at home or abroad. The connective thread is generally the research which the university performs. By offering its findings

to the community and to other scholars, the university assists in their development. Land grant colleges have had a long and successful tradition of service to the rural communities in which they were located. In 1964, President Johnson suggested that the task of the urban university was to offer a similar service to improve the plight of our cities. Title I of the Higher Education Act of 1965 now makes it possible for universities to participate in and to plan educational programs for urban and suburban needs. This support and encouragement has led to the development or expansion of urban study programs in some of our leading universities. These have received the assistance of thousands of college and university teachers from every major discipline. As advisors, critics, commentators, catalysts and innovators they have contributed their professional guidance. This demand will probably increase in the next few years. Because it has reached acute proportions in some parts of the country, faculties have been strained to keep up with their other responsibilities.

Faculty Satisfaction and Dissatisfaction

A few institutions have made systematic efforts to find the causes of the high attrition and low morale of some of their faculty members. /10/ Their investigations reveal that the work environment of the unit in which the professor holds membership is a more important determinant of his satisfactions than is the institutional environment as a whole. Certain potential satisfiers, such as support for his professional development, access to communication channels, participation in leadership and administrative concern for his personal welfare, are more influential than are material incentives in affecting the professor's attitude toward his work.

College teachers tend to express their dissatisfactions with their work environment in terms of deprivations which block their inclinations and drive

them into negativism and reduced creativity. Because the thirties and early forties appear to be the periods of greatest deprivation for college teachers, preventive measures applied during these periods seem indicated. These might include frequent reviews of the professor's work in terms of his future goals, and more opportunities for face-to-face interaction between him and certain key people. In terms of career cycles and stress, more frequent sabbaticals in the middle years and fewer later on, might relieve some of the critical press.

The flight from college teaching might be decreased or reversed, or many of the dissatisfactions with academic life ameliorated, if the use of assumptions and guesses about faculty contentment were supplemented by periodical examinations of data gathered from the faculty. Likert maintains that instruments to measure these variables are available or could be developed. If faculty opinion were analyzed for the causal relationship between work satisfaction and such variables as the organizational structure, administrative behavior, or the needs and desires of the faculty--plus the intervening variable of attitudes, personality and faculty interaction--meaningful administrative changes might be introduced to improve morale or the working environment.

A large pool of unused talent and teaching potential can be found among the full-time research staff in any major institution. Because these persons are organized as separate administrative units, their usefulness to the institution's teaching program is often overlooked. For example, one can find psychologists working in five or six different units on almost any university campus who have no communication with each other and are therefore often completely unaware of the contributions they can make to each other's work. Each person's socialization is to his own unit. Although some institutions do give courtesy appointments which make it "administratively correct" to invite "outsiders" to participate in the curriculum, this participation is generally on a sometimes basis, not an integrated part of the unit's educational program.

The loss of this talent to the teaching role is very considerable. The full-time research staff could provide a service to the teaching faculty in the form of a continual professional colloquy or seminar in which instructors were informed about research findings and researchers had opportunities to subject their methods to critical review. Such a seminar would provide excellent orientation for doctoral students also.

Teaching Methods as Factors in Staff Utilization

Although the lecture method has often and assidulously been denounced as an ineffectual media for transmitting knowledge, it continues to be the most frequently utilized college teaching method. Much of the criticism seems to pertain to the quality and content of the lecture or to the style of the lecturer rather than to the method per se. The charge that it depersonalizes the interaction between faculty and students and limits the opportunity for discussion has led many institutions to use junior faculty, teaching assistants or senior students as supervisors or leaders in small group discussions following the lecture given by senior professors. To date there is no conclusive evidence that the lecture as a learning method is any less effectual than most others.

Some colleges and universities have developed a tradition for great lecturers which they strive to continue. However, in the electronic age in which according to McLuhan "the medium is the message," the lecture as a teaching tool appears to have lost its appeal. In response to the press for change, college faculties attempt to revive other methods or create new ones. On almost any campus today some portion of the faculty are engaged in supervising independent study, tutorials, undergraduate or graduate seminars, small group dialogues and discussions, workshops, student-faculty colloquiums, intergroup conferences, retreats, films and film-making, field study or

community centered studies.

Research shows that students who vary on such characteristics as intelligence, cognitive style, sex, independence, flexibility, responsibility, motivation, authoritarianism or anxiety, respond differently to different kinds of teaching method or behavior. Some profit by and need individual personal attention. Others do better without close guidance. Some do well in small group discussions, independent study or permissive settings, others feel insecure or fail to develop through these methods. Independent students who are highly verbal prefer a discussion method, but other independent students are reserved and prefer to work in the library or in a tutorial situation. Women who test high in need achievement prefer independent study instead of lectures. Men who test high on this variable do better in a class or group situation. Some students are predisposed to learn facts; others to apply and synthesize facts. Students who accept a major responsibility in a course are generally those with a high interest in the field. Because studies on the effects of various teaching methods on learning are often inconclusive, many teachers question the often-expressed assumption that the ideal educational situation is one in which the student receives the personal attention of his instructor. They suggest that a more realistic goal would be to attempt to educate each student to the best of his and his institution's capacity. This implies a responsibility on the part of the institution to offer a variety of instructional choices and a commensurate responsibility on the part of the student to select the learning methods he finds conducive to his development.

The mere logistics of trying to match and mesh the methods that are best suited to the student's and professor's personalities, and are appropriate to their particular fields of study, loom as formidable barriers to academic planners. With rare exceptions, restraints are imposed by the orientation and

commitment of existing personnel and thus planners must lean upon the principle of accommodation rather than to the more attractive concept of innovation.

Research results show quite conclusively that college students learn well on their own, given the responsibility and motivation. This suggests that responsibility for a given course could be divided equitably between the teacher and the learner. For example, if the first seven or eight weeks of a fifteen-week semester were utilized by the professor to present the tools, techniques and basic territory to be explored, and the last seven or eight were given to the student in which to use the tools and techniques to explore knowledge independently, a better utilization of the teacher's competencies might result and the student's learning might become self-generative. If the professor were free from class meetings during the last seven- or eight-week period, he could use this time to offer individual attention to students or meee them in small groups to guide them in the analysis of ideas. During this same period the students would be free to explore topics, do library work, design a project, write papers, meet in small groups for verbal presentations of position papers, or to integrate the content of the course with knowledge previously learned. Depending on the curriculum and their background level, students might also use this time for field research, clinical observation, participation in seminars that are carefully coordinated with their course work, or in other projects designed to advance their grasp of the subject studied. There is impressive evidence to show that students gain in independence and in ability to relate under more flexibly structured learning conditions.

The Class Schedule

One of the major drawbacks in planning a variable approach to teaching is the tightness of the academic time schedule. The practice of chopping

knowledge into fifty-minute segments created the condition which fostered the lecture method and remains one of the main obstacles to educational experimentation and change. In the interest of maintaining order in the academic house-keeping, knowledge is compressed and teaching methods adapted to accommodate tidy administrative units that have been more or less standardized under the aegis of the National Association of Collegiate Registrars.

Recently a few innovative institutions have reasserted the primacy of academic priorities over administrative convenience. By offering a diversity of scheduling patterns, teachers and students in these institutions have the option to select the one that will be best suited to their needs and interests. Reports on these innovations indicate that many students tend to be better motivated toward learning and achieve better under a more flexible time schedule, while teachers find that with more direct control over the distribution of their teaching schedule they can introduee more variety into their methods, sustain interest, and respond adaptively and individually to the need of their students.

The New Technologies and Teaching

Some futurologists suggest that impending increases in automation dictates a need for universal higher education because it offers the simplest and most obvious way to fulfill the vacuum left by the elimination of the necessity for a full-time commitment to work. Many believe that an age is fast approaching in which higher education will be planned on a continuum instead of in definite time intervals or stages. In this event, the regular college or university program would probably merge with segments that are now separately planned as adult, extension or continuing education. To some extent the precedent has already been set. A large proportion of the college

population now alternates periods of study with periods of work or travel. This often extends their formal education over a decade or more of their adult life.

If universal higher education becomes a reality, the new devices for information processing and retrieval could catalyze the action and provide the means through which an integrated, systems approach to knowledge could be realized. In some fields the initial process of systematization has begun. In literature, for example, concordances have been completed on great bodies of writing, in the biological sciences digital computers give immediate feedback on laboratory experiements and store the data for future use whereas in education ERIC, the computerized Educational Retrieval Information Center of USOE, has immeasurably reduced the time and effort scholars formerly exerted keeping current in their field and makes information on new research more immediately accessible to those who need to apply its findings.

Some researchers foresee the possibility that the computer and other information science systems may be the means of bringing the disciplines into closer relationships and of reversing the progressive isolation of ideas from ideas and of man from man. To this end centers which house the new technologies are generally referred to as communication units.

In a few innovative pockets of higher education, programmed instruction is used to relieve the teachers of routine details. In others it is being used as an imaginative new instructional tool. A comprehensive experiment is currently under way at the Irvine campus of the University of California in which computer-assisted learning and teaching is available on a campus-wide scale. It is estimated that the functional capacity of the Irvine computerized systems will service more than a third of the courses, at least two

student-directed learning centers, and a communication network that will be available to neighboring educational institutions. The entire campus was initially planned and is being built around the new teaching technologies and tools. It will serve as a major research unit for experimentation on a large scale with alternative modes of teaching, learning and administrative operation. The results of this experimentation will have interesting implications for the utilization of the instructional staff.

The issue that involves teacher utilization and thus stimulates wide interest and concern, is the possibility that the new information technologies and the use of machines to program instruction will reduce the need for, or the status of, teachers. Developers of the new technology hold out no such utopian expectations. Rather they view the machines basically as instrumental responses to the problem which all teachers face--the individual differences among students. They point out that as experts in a substantive field teachers will be needed to program the machines, but more importantly they will be needed to transmit the styles of thinking and to develop the attitudes of mind which the factual programmed material elicits.

In terms of its effects on teachers, the programming of instruction will undoubtedly require them to reorganize their working habits and to apply their talents differently than they now do. However, the probabilities are high that teachers will have more, rather than less, work to do. The advantage will be that it will be work of a more creative and stimulating nature. Even if teaching machines comes into general use by the turn of the century, there are no data which signify that the demand for teachers will be modified in any significant numbers. At least for the

present, the costs of educating a teacher are far less than the cost of the machines needed to replace one--and the net results of using the machines appear at the moment to be far less promising. This situation will change when a significant number of trained personnel become available.

Studies at the Center for Research and Development in Higher Education at Berkeley indicate that graduate faculties in almost all fields now advise their students to take additional math and some work in computer science. In commenting on these recommendations, experts in learning theory suggest that training in this area should be accompanied by a study of the consequences as well as the limitations of automation. They note that while machines might relieve teachers of dreary lengths of routine or didactic teaching, and so free them for more important teaching duties, the consequences for the learner can result in a stifling of original thinking. For example, if the programed material is not planned creatively to stimulate and stress the skills of inquiry, interpretation and application, there is danger that only rote learning is developed and the rewards given for agreement with the programmer.

On a broader note, a highly respected authority /11/ warns of a future in which powerful educational syndicates might program curricula which conceivably could exert great influence on the minds of students and become the new orthodoxy. Although democracies tend to resist the rise of monolithic orthodoxy, "selling education" has become big business, and "opinion makers" and "image makers" are used increasingly by interest groups who electronically program the message they wish to lobby for or promote. If professional curriculum developers gain a place on the college campus, the faculty could

find itself in a position--with respect to its control of the program--analogous to the weak position it holds today in academic governance.

Grading Practice and Faculty Utilization

Another time-consuming activity that has come under heavy criticism and is currently the subject of close scrutiny is the grading and credit system. Critics charge that for many students credits and grades become ends in themselves to the detriment of the development of an interest in scholarship for its own sake. There is a growing body of evidence to show that the grading system often encourages poor learning and study habits, can produce overachievers as well as underachievers, and leads to unhealthy competition among peers.

Almost all college teachers would like to get the grading albatross off their shoulders. Many are in agreement with Huxley's acid commentary on the examination system used in England a century ago in which he said, "Examinees work to pass, not to know: and nature takes her revenge, they do pass, and they don't know."

Faculties as a whole resent the amount of time they are forced to devote to a task in which they have so little confidence. Many are pressing for the reappraisal of a system which specifies that teachers evaluate student performance in terms of alphabetical or numerical standards which few regard as meaningful--especially when that symbol becomes part of the student's permanent record. It is probably this question of closure or finality that makes the grading system seem repressive to thoughtful members of the faculty. The notion of a "final" examination in any branch of knowledge today seems fatuous, and the practice of grading the student on discrete fifteen-block units of knowledge (or ten under the quarter system) often leads to a lack of open-endedness about education for lifelong learning. The mere acquisition of

an A, B, C, D or F conveys little information about the student's growth since entering the course and offers him little solid evidence on which to assess his potential. Because the letter grade says nothing about the quality of his mind or the ways of thinking he used to achieve the grade, it reveals nothing about the student as a learner. Because it fails to include measures of his nonintellective interests, it says nothing about him as a person.

The issues raised here utilize a large part of a faculty member's time yet yield uneasy and questionable results. The need for a more defensible system of evaluation seems clear when one speculates on the importance that students' parents and others attach to grades and on the disparity in standards, errors in judgment and flimsy--and sometimes false--evidence on which they are assigned.

The grading system in higher education cries out for reform, not only because it is a waste of the teacher's time but more importantly because it touches the life of individuals with such finality. Decisions which determine the future career opportunities and judgments of an individual's ability are sometimes predicated on the difference between his 1.9 grade point average and the school's minimum admission standard of 2.0 or better. In too many cases the grade may be a more accurate reflection of the inferior school system he attended or of some personal deprivation unrelated to his intellectual promise. Many faculty members believe that the grading system sets up and perpetuates a practice which is reprehensible in a democratic society for it often leads to a marking off of the "haves" from the "have nots", or the dominant group from the minority. Some, in conscience, avoid participation in this practice by giving the same passing grade to all. The lack of consistency in grading standards is matched by a lack of consistency in the rewards they bring. For example, women tend to get better grades in many fields

than do men, but they rarely get commensurate consideration in terms of job offers or compensation.

The new campuses of the University of California at Santa Cruz and Irvine, Yale University, and a few other institutions, have recently dispensed with letter or numerical grades in favor of a pass-no pass system. These institutions have introduced variable evaluation methods in which the professor's time is spent with the student rather than with his papers only. During these sessions the quality of the student's thinking is evaluated and suggestions for needed improvement are made. A special effort is made to encourage the student toward self-evaluation. Both parties report positive results from these meetings.

A few other institutions have begun to experiment with variable grading systems. For example, in some cases a student receives a letter grade for all work in his major field and a pass-no pass for all work outside of his major. In other cases the student receives a "progress" notation on his record and in his senior year will take a series of comprehensive examinations on which his overall achievement will be evaluated and recorded. The rationale in this case is that it is more open-ended and a better measure of the individual's style or modes of thinking, hence a better measure of his growth potential.

There is a strong feeling among test and measurement experts that a great amount of faculty time is utilized poorly and a great deal of student discontent is generated through our present more or less standardized grading systems. It is possible in some institutions that a student may go through four years of college never having had a face-to-face discussion with any professor about his progress or promise.

The fact that many institutions were recently forced to reexamine their evaluation policies and procedures and found them untenable for the modern institution of higher education--and for education in a democratic society--may lead the way for a systems reform. To avoid a patchwork approach, faculties need time for a thorough review of the rationale on which to predicate needed changes in the academic calendar, the time schedule, the credit system, and the grading system. Some secondary school systems have recognized the importance of not superimposing this important work on the regular work schedule. They pay their faculties to do broad academic planning during summer periods. Institutions of higher education are greatly in need of a similar plan.

Some Basic Issues for Planning

There is an imperative need for a variety of innovative educational and social inventions in higher education which will assure more effective utilization of the faculties' competencies and excite the intellectual interests of students. The malaise which the latter exhibit and the animus which they express about their educational programs probably will not be resolved simply by shoring up old structures. Bolder, more imaginative innovations are needed at the doctoral level if education is to be a pacesetter toward self-renewal and growth. In Gardner's words:

> ...We are witnessing changes so profound and far-reaching that the mind can hardly grasp all the implications. With respect to most of these events...we are not just passive observers but are helping to produce the changes. That is a story of dynamism, not deterioration.
>
> Yet no one can fail to see in some segments of our society the dry rot produced by apathy, by rigidity and by moral emptiness. Only the blind and complacent could fail to recognize the great tasks of renewal facing us--in government, in education, in race relations, in urban development, in international affairs, and most of all in our own minds and hearts.
>
> ...Unless we foster versatile, innovative and self-renewing men and women, all the ingenious social arrangements in the world will not help us. /12/

Most of all faculties need time to reflect on what is needed for self-renewal. Without adequate opportunity for planning, colleges and universities will continue to react rather than to renew.

The probability is high that during the next five years available teaching resources will not keep pace with the growth in college student enrollments, therefore the use of graduate students as surrogate teachers in undergraduate classes will become more frequent. To insure the adequacy of their preparation for this task the Association of Graduate Schools recommend that more academically defensible programs of preparation for college teaching should be made available in the doctoral program. If possible, alternative choices should be given among: 1) supervised teaching experience as an academic requirement, 2) a program leading to degrees short of the doctorate and aimed at the production of junior college teachers, or 3) a doctorate in college teaching in a subject matter discipline. These programs should be carefully designed to orient and socialize the student to faculty organization and operation as well as to the arts and skills of teaching.

Since wide-scale reductions in class size do not seem feasible for the foreseeable future, experiments using variable teaching methods and allowing variable learning options within the same large course should be encouraged. Students should be required to play a more independent role in their own learning. Structurally induced restraints such as time, place or manner of class meetings, should be waived where the conditions for learning warrant a more flexible approach.

New educational strategies which enable students to determine their own conditions for learning should be developed with the understanding that the student will accept the consequences of his choices. Revisions in the use of the teaching staff should accompany this development.

New organization forms, such as the Board of Educational Development at Berkeley, should be initiated to ease the introduction of experimental programs and to support the efforts of the faculty who wish to personalize their teaching or test new approaches to knowledge.

Television, programmed instruction, and other appropriate media should be utilized wherever possible in the interest of making the most efficient and effective use of instruction and faculty time.

The rudimentary knowledge now available on the problems of individualizing instruction and of allocating instructional resources so as to maximize their utility needs reenforcement and expansion through increased research on college teaching.

New techniques for teaching minority groups should be developed and special training should be made available for teachers who work with such groups. Nonacademic personnel representing the minority should be utilized to orient the teaching faculty and to help them to gain insight on the basic needs of special individuals.

Opportunities should be made available for the continuous in-service education of college teaching, especially among those who do not engage in research.

Efforts should be made to encourage an early commitment to college teaching as a career through the development of undergraduate courses which expose promising students to the nature of the institution of higher education and interests them in its work.

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